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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/714,816

11/17/2003

Kunihiro Tashiro

1117.68737

2176

7590 02/10/2009
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EXAMINER

CHIEN, LUCY P

ART UNIT

PAPER NUMBER

2871

MAIL DATE

DELIVERY MODE

02/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/714,816	Applicant(s) TASHIRO ET AL.	
	Examiner LUCY P. CHIEN	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/14/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/14/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Comment

Applicant's representative called and pointed out errors. Examiner agrees and the final rejection sent out on 1/6/2009 has been withdrawn and replaced with this non final rejection. Restart response time period.

Response to Arguments

Applicant's arguments, All pages, filed 10/20/2008 with respect to Claim 11,12,13 have been fully considered and are persuasive. The rejection of Claim 11-16 has been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minoura et al (US 6108064) and of Ohmura et al (US 6141075) in view of Wakita et al (US 6781759)

Regarding Claim 11-13.

Minoura et al discloses (fig. 41 and Fig. 48) a reflecting layer (42) for reflecting incident light; a liquid crystal layer (1) provided on the reflecting layer in which alignment of liquid crystal molecules is vertical (Column 13, rows 34-35); and a retardation plate (8

or 9) and a polarizing plate (10) provided on a front surface of the liquid crystal layer (1).
Wherein the retardation plate (8)

Minoura et al does not disclose the birefringence in a direction of the thickness nor the value range of R_f/R_{lc} and the projection and depression average tilt angles.

Ohmura et al discloses the birefringence in a direction of the thickness (column 11, rows 30-35) a ratio between a retardation R_f (column 29, rows 45-50)(100 nm) thereof and a retardation R_{lc} is (80-400 nm) (abstract) the liquid crystal layer , R_f/R_{lc} ($100/80=1.25$) to ($100/800=.125$), i.e. if R_f is 100 and R_{lc} is 111, then $R_f/R_{lc}= 0.9$. It would have been obvious to one ordinary skill in the art at the time of the invention was made to have the retardation R_f/R_{lc} value being a value of not less than 0.6 nor greater than 0.9, or less than 0.5. nor greater than 0.8, or value of not less than 0.4 nor greater than 0.7 since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Wakita et al discloses (Fig. 18e) wherein said reflecting layer has projections (shown in Fig. 18e) and depressions formed on a surface thereof, an average tilt angle of the projections and depressions being a value of 4° - 11° . It would have been obvious to one ordinary skill in the art at the time of the invention was made to have the projections and depressions being a value of not less than 4° nor greater than 6° , and not less than 7° nor greater than 9° , and not less than 10° nor greater than 15° , since it has been held that where the general conditions of a claim are disclosed in the prior art,

discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

It would have been obvious to one of ordinary skilled in the art to modify Minoura et al's display to include Ohmura et al's retardation ratio values to include a phase retarder that improves image quality (abstract) and to also include Wakita et al's depression and projection tilt angles motivated by the desire to realize a window type scattering characteristic with a small amount of direction dependency, thereby enabling the provision of bright displays with a wide viewing angle (column 2, rows 47-52).

Regarding Claim 14.

In addition to Minoura et al Ohmura et al and Wakita et al as disclosed above, Minoura et al discloses (Fig. 53B) wherein where refractive indexes in an x direction, a y direction, and a z direction of said retardation plate are n_x , n_y , and n_z respectively, and a N_z coefficient is defined such that $N_z = (n_x - n_z)/(n_x - n_y)$, the N_z coefficient of said retardation plate is 1 or less. As shown in Figure 53B n_z is greater than n_y which makes $N_z = (n_x - n_z)/(n_x - n_y)$, the N_z coefficient of said retardation plate is 1 or less. Which means that $n_z \geq n_y$ (Column 37, rows 47-57).

Regarding Claim 15.

In addition to Minoura et al, Ohmura et al and Wakita et al as disclosed above, Minoura et al discloses wherein said retardation plate is made by layering a plurality of uniaxially stretched films (column 37, rows 12-15) which are arranged in layers such that slow axes of the respective uniaxially stretched films are substantially orthogonal.

Regarding Claim 16

In addition to Minoura et al, Ohmura et al and Wakita et al as disclosed above, Minoura et al discloses wherein the liquid crystal molecule of said liquid crystal layer has a negative dielectric constant anisotropy (abstract) perpendicular to the substrate plane. Therefore the rejection is maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUCY P. CHIEN whose telephone number is (571)272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lucy P Chien

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Examiner
Art Unit 2871

/David Nelms/
Supervisory Patent Examiner, Art Unit 2871